

Abstract of the Disclosure

Systems that distribute map data and related map services are vital to companies in many industries, for example, telecommunications, trucking, and national defense. These systems typically comprise a computer, known as a server, which retrieves the map data, and a computer, known as a client, which electronically requests and receives map data from the server over a computer network, such as the Internet. Servers in these systems often suffer from at least two problems: first, the slow delivery of the map data and related services to clients, and second, the inability to operate in different modes with different types of clients. Accordingly, the inventors devised servers, systems, and related methods for rapidly delivering map data to many types of client, ranging from mobile telephones and personal digital assistants to workstations. To support multi-modal operations with at least two clients, an exemplary system includes a map server having two or more client-mode software modules or programs that govern how the server interacts with the clients. The first client, using an appropriate network address, links to the first program and receives a copy of several mapping objects, enabling the first client to provide certain map functions independent of the server. The second client links to the server using a different network address and receives proxy mapping objects, instead of the actual mapping objects, enabling the second client to work with the server to provide the map functions. The exemplary system also implements client-side and server-side caching of map data, and expandable map service pools, all promoting rapid delivery of map data and services.